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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 0104

Application Number: 09/937,844
Filing Date: 9/28/2001
Appellant(s): Mihan et al.

David C. Liechty
For Appellant

EXAMINER'S ANSWER

MAILED
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GROUP 1700

This is in response to the appeal brief filed December 12, 2003.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The summary of invention contained in the brief is deficient because claims 14 and 15, entered after final rejection, are rejected together with the rest of the claims as set forth in the advisory action mailed November 18, 2003.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows:

Whether claims 1-12 and 14-15 are unpatentable under 35 USC 103 as be obvious from the disclosure of Tani et al. (JP 10-231317).

(7) Grouping of Claims

The rejection of claims 1-12 and 14-15 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

Tani et al., JP 10-231317, September 2, 1998

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The instant claims are directed to an olefin polymerization process in the presence of a transition metal complex having a tridentate cyclic ligand containing at least one substituent having a donor function. The substituent having donor function is defined in page 2, lines 24-34 of page 2 of the specification as a heteroatom containing group.

The Examples 2 and 7 of Tani listed in Table 1 of page 29 teaches an ethylene polymerization in the presence of a catalyst composition containing vanadium (III) chloride-1,3,5-triisopropylhexahydro-1,3,5-triazine or chromium (II) chloride-1,3,5-triisopropylhexahydro-1,3,5-triazine, and the activator is tris(pentafluorophenyl)boron. Tani's working examples meets all of the limitation of the instant claims except that cyclic nitrogen-tridentates of the vanadium complexes in Tani's working examples does not have substituent which having a donor function. However, Tani does expressly

teach that, in the cyclic polyamine of formula (1), R can be a substituted hydrocarbon group and the exemplified substituent groups on the hydrocarbon group are alkoxy, aryloxy, dialkylamino and alkylthio groups (page 5-6, paragraphs [0006] to [0008]).

Therefore, it would have been obvious to a skilled artisan at the time the invention was made to employ Tani's teaching to provide cyclic nitrogen-tridentate containing transition metal complexes wherein the R group of the cyclic nitrogen-tridentate is hydrocarbon group containing substituent such as hydrocarboxy, hydrocarbylamino or hydrocarbylthio group because such are expressly taught in Tani and all of the embodiments of the reference are expected to work and in the absence of any showing of criticality and unexpected results.

(11) Response to Argument

Appellants have traversed the above rejections on the basis of alleged evidence showing unexpected results. Appellants have asserted in their previous replies that the catalyst of appellants' claims produces "polymers which have a greatly elevated molecular weight when compared with those of the prior art". Appellants further assert that the Tani's working examples, Examples 1-8, listed in Table 1 of page 29 are comparable to appellants' working example such as Examples 20 and 21 listed in Table 1 on page 22 of the specification, however, "Tani produces either C₄₋₁₄ oligomer fractions predominantly or significantly, or with longer residence times, produces some polymer" while appellants' examples produced polymers in relatively short residence time.

The burden of coming forward with unexpected results to rebut a prima facie case of obviousness is on the appellants, appellants have failed to meet that burden. The unexpected results must be established by factual evidence; mere argument or conclusory statements in the specification do not suffice. *Geisler*, 116 F. 3rd at 1470, 43 USPQ2d at 1365 (quoting *In re De Blauwe*, 736 F. 2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984)). Furthermore, unexpected results must be established by comparing the claimed invention against the closest prior art. *De Blauwe*, 736, F. 2d 699, 705, 222 USPQ at 196 (“[A]n applicant relying on comparative tests to rebut a prima facie case of obviousness must compare his claimed invention to the closest prior art.”); accord *In re Merchant*, 575 F. 2d 865, 869, 197 USPQ 785, 788 (CCPA 1978). It is the examiner’s position that appellants have not provided sufficient evidence to rebut the prima facie case of obviousness because (i) the experimental evidence does not include a comparison of the claimed invention against the closest prior art, and (ii) the evidentiary showing is far from being commensurate in scope with the degree of patent protection sought. *In re Kulling*, 897 F. 2d 1147, 1149, 14 USPQ 2d 1056m 1058 (Fed. Cir. 1990) (“ ‘[O]bjective evidence of nonobviousness must be commensurate in scope with the claims.’ ”) (quoting *In re Lindner*, 457 F. 2d, 506, 508, 173 USPQ 356, 358 (CCPA 1972); *In re dill*, 604 F. 2d 1356, 1361, 202 USPQ 805, 808 (CCPA 1979) (“The evidence presented to rebut a prima facie case of obviousness must be commensurate in scope with the claims to which it pertains.”)).

First of all, the polymerizations of appellants’ Examples 20 and 21 were not conducted under conditions which were comparable to those examples listed in Tani’s

Table 1 in that (i) polymerization temperatures were different: appellants' temperatures were 40°C vs. Tani's 20°C; (ii) activator were different: appellants used methylaluminoxane (MAO) in Examples 20 and MAO and N,N-dimethylanilinium tetrakis(pentafluorophenyl)borate (DMAB) in Example 21 vs. Tani used tris(pentafluorophenyl)boron with triethylaluminum in Examples 2 and 7 and used no activators in Examples 1, 3-6 and 8; (iii) the concentrations of ethylene were different: 20-40 l/hr of ethylene was passed to appellants' reactor vs. only 50 ml of ethylene was blown in Tani's reactor; and the list goes on. Because polymerizations appellants' and Tani's are not conducted in the same conditions, no meaningful conclusion can be drawn at this point. For example, appellant's polymerization is conducted at a much higher temperature than that of Tani, thus, higher catalyst activity should have been observed in appellants' process since the activity of catalyst increases with the temperature in general, especially considering the change is from 20°C (cold) to 40°C (warm).

Secondly, appellants refer to their own disclosure of page 13, lines 24-31 of the specification which discloses that N,N',N''-trimethyl-1,4,7-triazacyclononanechromium trichloride produces only dimmers while appellants' analogous compound produces polymer. Again, the comparison is not based on the embodiments of the cited prior art, e.g., Tani's Examples 2 and 7. Appellants have also not disclosed the polymerization conditions used for their comparative examples. On the other hand, Tani's Examples 2 and 7 demonstrate that, at Tani's polymerization condition, polymers rather dimmers

were produced even though the molecular weights of those polymers were not disclosed.

Thirdly, regarding the melting points arguments, while the melting points of Tani's polymer samples such as those of Examples 2 and 7 are not expressly taught, it is appellant's burden to forward with unexpected results to prove appellants' allegations that appellants' catalyst produces polymers having higher melting temperatures than those of Tani's Examples 2 and 7 under Tani's polymerization conditions. The burden has not yet met by the appellants.

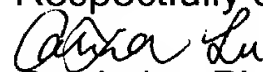
Finally, appellants argue that the appellants' data listed in Table 1 of page 22 of the specification does not allow the examiner in the advisory action of November 18, 2003 to make the conclusion that appellants' own working examples such as Examples 12 -16 and 18-20 did not give good polymer productivity. As shown in Table 1, the catalyst activities listed in col. 7 under "Activity Kg/mol·Cr·h" were ranging from 0-20 Kg/mol·Cr·h, Tani's catalyst activities for Examples 2 and 7 were 16 and 88 g/g-metal·h which convert to 0.836 and 4.576 Kg/mol·Cr·h respectively. Because appellants consider that the catalyst activities of Tani's are low and the catalyst activities Tani's Examples 2 and 7 are in the range of appellants' working examples, one must conclude that appellants' catalyst activities are also very low according to appellants' own standards.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


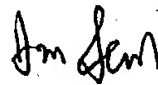

Caixia Lu, Ph. D.
Primary Examiner
Art Unit 1713

January 23, 2004

Conferees:

David Wu

James Seidleck

KEIL & WEINKAUF
1350 CONNECTICUT AVENUE, N.W.
WASHINGTON, DC 20036